848 Material Safety Data Sheet

Functional Group ID=MS

Introduction:

This Draft Standard for Trial Use contains the format and establishes the data contents of the Material Safety Data Sheet Transaction Set (848) for use within an Electronic Data Interchange (EDI) environment. The transaction set can be used to communicate chemical characteristics, hazards, and precautions for the safe handling and use of a material. The transaction set is intended to convey the information required for a Material Safety Data Sheet (MSDS) as defined by the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR 1910.1200 in the United States, and Workplace Hazardous Materials Information System (WHIMS) in Canada, and various state, province, and local requirements under right-to-know legislation.The MSDS provides the receiver with detailed information concerning material identity, emergency response, chemical and physical characteristics, toxicology, and industrial hygiene procedures.State and federal law dictate who is obligated to provide the MSDS and to whom it should be issued. In addition, third-party providers or others with no statutory obligation may voluntarily provide an MSDS to anyone.This transaction set allows for transmission of MSDS data in a structured, unstructured, or semi-structured form.CAUTION: With this transaction set, text format is critical due to the MSDS's primary role as a vehicle for hazards communication. The risk if this information is not transmitted clearly and accurately could be harmful to human life, harmful to the environment, could cause mishandling of product, could result in regulatory non-compliance, and could result in liability.Trading partners need to agree on how to interpret, store, and display/print MSDS text, especially text contained in the MSG and SD1 segments. For example, a sender may wish to format text so that one print line is mapped to one MSG segment. Segment terminator and data element delimiter characters shall not appear in any MSDS data.WARNING: Alteration of the original document will occur if the EDI translator or application software converts characters to uppercase. This may adversely affect the appearance, effectiveness, clarity, readability, and communicability of the printed MSDS document.

Notes:

1. This implementation convention provides the fully structured format for the submission of a Material Safety Data Sheet (MSDS). The intent of this format is to allow for the automated population of a database. The Federal Government seeks to maximize the use of this convention for that purpose.

2. This data requirement conforms with the Chemical Manufacturer's Association ANSI Z400.1 national standard for MSDS preparation and provides for Hazard Communication (HAZCOM) Warning Label information.

3. Strict version control of each MSDS for unique products and formulations is required. The primary method for MSDS identification is through a linkage between a unique MSDS reference number, a revision number if applicable, a manufacturer's part number, a CAGE (commercial and government entity) code, and MSDS effective date. Priority should be given to this data when identifying a unique product.

4. Send only one MSDS per transaction.

5. The ANSI Z400 MSDS structure requires a Section Header for each specified section of the MSDS. If no information is applicable or available, an indicative message in 2/MSG/050 must follow the section identification information, for example, "no data available," "not applicable", or "found in another section."

Heading:

	Pos. No.	Seg. ID	Name	Req. Des.	Max.Use	Loop Repeat	Notes and Comments
Must Use	010	ST	Transaction Set Header	M	1		
Must Use	020	BMS	Beginning Segment For Material Safety Data Sheet	M	1		
Not Used	030	NTE	Note/Special Instruction	O	>1		
Must Use	040	REF	Reference Numbers	O	>1		
	050	DTM	Date/Time Reference	O	>1		
			LOOP ID - N1			>1	
	060	N1	Name	O	1		
	070	N2	Additional Name Information	O	>1		
	080	N3	Address Information	O	>1		
	090	N4	Geographic Location	O	1		
	100	REF	Reference Numbers	O	>1		
	110	PER	Administrative Communications Contact	O	>1		

Detail:

	Pos. No.	Seg. ID	Name	Req. Des.	Max.Use	Loop Repeat	Notes and Comments
			LOOP ID - LIN			999999	
Must Use	010	LIN	Item Identification	M	1		n1
	020	PID	Product/Item Description	O	>1		
			LOOP ID - MSS			>1	
	030	MSS	Material Safety Data Sheet Section Information	O	1		n2
Not Used	040	MEA	Measurements	O	>1		
	050	MSG	Message Text	O	>1		n3
			LOOP ID - SD1			>1	
	060	SD1	Safety Data	O	1		n4
Not Used	070	MEA	Measurements	O	>1		
Not Used	072	PKG	Marking, Packaging, Loading	O	>1		
	074	TD4	Carrier Details (Special Handling, or Hazardous Materials, or Both)	O	>1		
	080	MSG	Message Text	O	>1		n5
			LOOP ID - CID			>1	
Not Used	100	CID	Characteristic/Class ID	O	1		
Not Used	110	MEA	Measurements	M	>1		
			LOOP ID - LX			>1	
	115	LX	Assigned Number	O	1		
	120	CID	Characteristic/Class ID	O	1		

	130	MEA	Measurements	O	>1		
Not Used	140	STA	Statistics	O	1		
	150	TMD	Test Method	O	1		
	160	MSG	Message Text	O	>1		
			LOOP ID - SD1			>1	
	170	SD1	Safety Data	O	1		
	180	MEA	Measurements	O	>1		
Not Used	182	PKG	Marking, Packaging, Loading	O	>1		
Not Used	184	TD4	Carrier Details (Special Handling, or Hazardous Materials, or Both)	O	>1		
	190	MSG	Message Text	O	>1		
			LOOP ID - CID			>1	
Not Used	210	CID	Characteristic/Class ID	O	1		
Not Used	220	MEA	Measurements	M	>1		

Summary:

	Pos. No.	Seg. ID	Name	Req. Des.	Max.Use	Loop Repeat	Notes and Comments
Not Used	010	CTT	Transaction Totals	O	1		n6
Must Use	020	SE	Transaction Set Trailer	M	1		

Transaction Set Notes

1. LIN loop is product level. MSS is section level. The first SD1 loop is safety data relating to the section only. The first CID loop is for complex measurements on safety data. LX loop is used to specify product characteristics, components, or complex measurements (i.e., those with environmental parameters). The second SD1 loop is safety data relating to a particular product characteristic or component. The second CID loop is for complex measurements on safety data, which related to a particular product characteristic or component.

2. Regulation notifications can be contained in MSS or SD1 or both.

3. Trading partners must agree on a convention for text processing that will not split words, and which can convey correct meaning, in successive SD1 or MSG segments.

4. Regulation notifications can be contained in MSS or SD1 or both.

5. Trading partners must agree on a convention for text processing that will not split words, and which can convey correct meaning, in successive SD1 or MSG segments.

6. The number of line items (CTT01) is the accumulation of the number of LIN segments. Hash total (CTT02) is not used in this transaction set.

Segment: **ST** **Transaction Set Header**
Position: 010
Loop:
Level: Heading
Usage: Mandatory
Max Use: 1
Purpose: To indicate the start of a transaction set and to assign a control number
Syntax Notes:
Semantic Notes: **1** The transaction set identifier (ST01) used by the translation routines of the interchange partners to select the appropriate transaction set definition (e.g., 810 selects the Invoice Transaction Set).
Comments:

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	**ST01**	**143**	**Transaction Set Identifier Code** Code uniquely identifying a Transaction Set 848 X12.36 Material Safety Data Sheet	**M ID 3/3**
Must Use	**ST02**	**329**	**Transaction Set Control Number** Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set ***A unique number assigned by the originator of the transaction set, or the originator's application program.***	**M AN 4/9**

Segment: **BMS** **Beginning Segment For Material Safety Data Sheet**
Position: 020
Loop:
Level: Heading
Usage: Mandatory
Max Use: 1
Purpose: Beginning of the Material Safety Data Sheet Transaction Set, to identify the distinct type of report and to transmit key identifying numbers and dates relating to that report
Syntax Notes:
Semantic Notes:
1 BMS02 specifies date the report is effective (YYMMDD).
2 BMS04 specifies sender's report identifier.
3 BMS05 is a number indicating the chronological sequence of this revision.
4 BMS08 specifies the state or province for ultimate receipt of this report.
5 BMS09 specifies the country for ultimate receipt of this report.
Comments:
1 If BMS01 is code "05" and BMS04 is used, then BMS06, if used, must identify the previous version of this report which is being replaced.
If BMS01 is code "05" and BMS05 is used, then BMS07, if used, must identify the previous version of this report which is being replaced.
2 BMS03 specifies the language of the text information in the Material Safety Data Sheet (MSDS).

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	**BMS01**	**353**	**Transaction Set Purpose Code** Code identifying purpose of transaction set 00 Original ***Use to identify an original MSDS transaction submission.*** 01 Cancellation ***Use only to indicate the cancellation of a previously submitted MSDS (original or replacement) when the MSDS is found to be inaccurate and a new original (or replacement) MSDS has been submitted.*** 05 Replace ***Use to identify the original submission of an MSDS which will replace an existing MSDS, whether previously submitted to DoD or not. Submission of a replacement MSDS is considered to be advisory information for the recipient and is not associated with an ongoing acquisition action. This encompasses MSDSs superseded, replaced, or revised.***	**M ID 2/2**

Must Use	**BMS02**	**373**	**Date**	**M**	**DT 6/6**
			Date (YYMMDD)		
			Cite the date on which MSDS content is in effect.		
	BMS03	**819**	**Language Code**	**O**	**ID 2/3**
			Code designating the language used in text, from a standard code list maintained by the International Standards Organization (ISO 639)		
			Use to specify a language if other than English.		
	BMS04	**127**	**Reference Number**	**O**	**AN 1/30**
			Reference number or identification number as defined for a particular Transaction Set, or as specified by the Reference Number Qualifier.		
			Cite the MSDS reference number which uniquely identifies any individual MSDS in original and cancellation submissions. For replacement MSDS submissions, cite the reference number of the MSDS which is replacing the obsolete MSDS.		
	BMS05	**691**	**Revision Number**	**O**	**N0 1/4**
			A number which indicates the chronological sequence of revisions and updates to a ratemaking docket		
			Use, as applicable, to identify the unique revision number associated with the MSDS reference number as assigned by the developer of the MSDS. This further identifies the version of the MSDS being submitted or described.		
	BMS06	**127**	**Reference Number**	**O**	**AN 1/30**
			Reference number or identification number as defined for a particular Transaction Set, or as specified by the Reference Number Qualifier.		
			Use only in MSDS replacement submissions to identify the MSDS reference number of the MSDS being replaced.		
	BMS07	**691**	**Revision Number**	**O**	**N0 1/4**
			A number which indicates the chronological sequence of revisions and updates to a ratemaking docket		
			Use only in MSDS replacement submissions to identify the MSDS revision number applicable to the MSDS being replaced.		
Not Used	**BMS08**	**156**	**State or Province Code**	**O**	**ID 2/2**
			Code (Standard State/Province) as defined by appropriate government agency		
Not Used	**BMS09**	**26**	**Country Code**	**O**	**ID 2/3**
			Code identifying the country		

Segment: **REF** **Reference Numbers**
Position: 040
Loop:
Level: Heading
Usage: Optional (Must Use)
Max Use: >1
Purpose: To specify identifying numbers.
Syntax Notes: **1** At least one of REF02 or REF03 is required.
Semantic Notes:
Comments:
Notes: ***1. Use for original and cancellation submissions to identify the appropriate reference number associated with the MSDS submission requirement. Use multiple repetitions of the 1/REF/040 segment as needed to identify contract number and associated release or delivery order numbers.***

2. The 1/REF/040 segment MUST be used once to identify the type of implementation convention being used for this transaction. Use code EZ in REF01 and cite the appropriate code in REF02.

3. Use for replacement submissions, if known, to identify the applicable contract, purchase order, or other number associated with the original submission.

Data Element Summary

	Ref. Des.	Data Element	Name		Attributes
Must Use	**REF01**	**128**	**Reference Number Qualifier**		**M ID 2/2**
			Code qualifying the Reference Number.		
			2G	Amendment	
			C4	Change Number	
				Use to cite the contract modification number, as required.	
			CT	Contract Number	
			DO	Delivery Order Number	
				Use to cite the delivery order number against requirements or indefinite quantity contracts.	
			EZ	Electronic Data Interchange Agreement Number	
				Use to identify the implementation convention used for this transaction by citing the following in REF02: "848F005"	
			KS	Solicitation	
				A discreet number assigned by the purchasing activity to differentiate between different solicitations	
				Use to indicate the solicitation number under which the MSDS is submitted. This is the primary	

				method for cross reference to purchase prior to contract award.		
			PR	Price Quote Number		
			TN	Transaction Reference Number		
				Use to cite the MSDS request number given in BMS04 of the MSDS request transaction, if applicable.		
Must Use	**REF02**	**127**	**Reference Number**		**X**	**AN 1/30**
			Reference number or identification number as defined for a particular Transaction Set, or as specified by the Reference Number Qualifier.			
	REF03	**352**	**Description**		**X**	**AN 1/80**
			A free-form description to clarify the related data elements and their content			

Segment: **DTM** **Date/Time Reference**
Position: 050
Loop:
Level: Heading
Usage: Optional
Max Use: >1
Purpose: To specify pertinent dates and times
Syntax Notes: **1** At least one of DTM02 DTM03 or DTM06 is required.
2 If either DTM06 or DTM07 is present, then the other is required.
Semantic Notes:
Comments:
Notes: ***Use in MSDS original, cancellation, and replacement transactions to identify the MSDS date of preparation.***

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	**DTM01**	**374**	**Date/Time Qualifier** Code specifying type of date or time, or both date and time 042 Superseded ***Use in replacement submissions only to identify the preparation date of MSDS being replaced.*** 102 Issue ***Use in original and cancellation transactions to identify the date of preparation for the MSDS being submitted or canceled. Use in replacement submissions to identify the original date of preparation for the new MSDS.***	**M ID 3/3**
Must Use	**DTM02**	**373**	**Date** Date (YYMMDD)	**X DT 6/6**
Not Used	**DTM03**	**337**	**Time** Time expressed in 24-hour clock time as follows: HHMM, or HHMMSS, or HHMMSSD, or HHMMSSDD, where H = hours (00-23), M = minutes (00-59), S = integer seconds (00-59) and DD = decimal seconds; decimal seconds are expressed as follows: D = tenths (0-9) and DD = hundredths (00-99)	**X TM 4/8**
Not Used	**DTM04**	**623**	**Time Code** Code identifying the time. In accordance with International Standards Organization standard 8601, time can be specified by a + or - and an indication in hours in relation to Universal Time Coordinate (UTC) time; since + is a restricted character, + and - are substituted by P and M in the codes that follow	**O ID 2/2**
	DTM05	**624**	**Century** The first two characters in the designation of the year (CCYY)	**O N0 2/2**

Not Used	**DTM06**	**1250**	**Date Time Period Format Qualifier** Code indicating the date format, time format, or date and time format	**X**	**ID 2/3**
Not Used	**DTM07**	**1251**	**Date Time Period** Expression of a date, a time, or range of dates, times or dates and times	**X**	**AN 1/35**

Segment: **N1** **Name**
Position: 060
Loop: N1 Optional
Level: Heading
Usage: Optional
Max Use: 1
Purpose: To identify a party by type of organization, name, and code
Syntax Notes: **1** At least one of N102 or N103 is required.
2 If either N103 or N104 is present, then the other is required.
Semantic Notes:
Comments: **1** This segment, used alone, provides the most efficient method of providing organizational identification. To obtain this efficiency the "ID Code" (N104) must provide a key to the table maintained by the transaction processing party.
2 N105 and N106 further define the type of entity in N101.
Notes: ***1. Multiple iterations of the 1/N1/060 loop are permitted to identify the party(ies) associated with the development and submission of the MSDS.***

2. If possible, use only N101 and the N103/N104 combination to provide the appropriate entity and address information.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	**N101**	**98**	**Entity Identifier Code**	**M ID 2/2**
			Code identifying an organizational entity, a physical location, or an individual	
			DS Distributor	
			Use as needed to identify the entity in the material chain-of-custody responsible for distributing the material and which did not alter product information.	
			MF Manufacturer of Goods	
			Use to identify the product manufacturer and entity responsible for determining the final product formulation.	
			R6 Requester	
			Use to identify the entity initiating the MSDS request or requirement.	
			SU Supplier/Manufacturer	
			Use as needed to identify the entity providing the material if other than distributor or manufacturer of goods.	
			YE Third Party	
			Use to identify the MSDS submitter when other than the manufacturer or party providing the	

				material.		
			ZD	Party to Receive Reports		
				The organization designated to receive reports		
				Use to indicate the party to receive the MSDS if other than the requester or entity initiating the requirement (R6).		
	N102	**93**	**Name**		**X**	**AN 1/35**
			Free-form name			
			Use only when no coded identification for the entity is available.			
	N103	**66**	**Identification Code Qualifier**		**X**	**ID 1/2**
			Code designating the system/method of code structure used for Identification Code (67)			
			1	D-U-N-S Number, Dun & Bradstreet		
			9	D-U-N-S+4, D-U-N-S Number with Four Character Suffix		
			10	Department of Defense Activity Address Code (DODAAC)		
				Use to identify a government activity within the Department of Defense.		
			33	Commercial and Government Entity (CAGE)		
			FI	Federal Taxpayer's Identification Number		
	N104	**67**	**Identification Code**		**X**	**AN 2/20**
			Code identifying a party or other code			
Not Used	**N105**	**706**	**Entity Relationship Code**		**O**	**ID 2/2**
			Code describing entity relationship			
	N106	**98**	**Entity Identifier Code**		**O**	**ID 2/2**
			Code identifying an organizational entity, a physical location, or an individual			
			FR	Message From		
				Use as needed in conjunction with appropriate 1/N101/060 code to identify the party originating the transaction set.		
			TO	Message To		
				Use as needed in conjunction with the appropriate 1/N101/060 code to identify the party to receive the transaction set.		

Segment: **N2** **Additional Name Information**
Position: 070
Loop: N1 Optional
Level: Heading
Usage: Optional
Max Use: >1
Purpose: To specify additional names or those longer than 35 characters in length
Syntax Notes:
Semantic Notes:
Comments:
Notes: ***Use only as required in conjunction with N102 to further identify the entity when the N103/N104 combination is not sufficient. For example, use to identify a specific division or office of the organization cited in N102.***

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes	
Must Use	**N201**	**93**	**Name** Free-form name	**M**	**AN 1/35**
	N202	**93**	**Name** Free-form name	**O**	**AN 1/35**

Segment: **N3** **Address Information**
Position: 080
Loop: N1 Optional
Level: Heading
Usage: Optional
Max Use: >1
Purpose: To specify the location of the named party
Syntax Notes:
Semantic Notes:
Comments:
Notes: ***Use only as required in conjunction with N102 to further identify the entity's address when the N103/N104 combination is not sufficient.***

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes	
Must Use	**N301**	**166**	**Address Information** Address information	**M**	**AN 1/35**
	N302	**166**	**Address Information** Address information	**O**	**AN 1/35**

Segment: **N4** **Geographic Location**
Position: 090
Loop: N1 Optional
Level: Heading
Usage: Optional
Max Use: 1
Purpose: To specify the geographic place of the named party
Syntax Notes: **1** If N406 is present, then N405 is required.
Semantic Notes:
Comments: **1** A combination of either N401 through N404, or N405 and N406 may be adequate to specify a location.
2 N402 is required only if city name (N401) is in the USA or Canada.
Notes: ***Use only as required in conjunction with N102 to further identify the entity location when the N103/N104 combination is not sufficient.***

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes	
	N401	**19**	**City Name** Free-form text for city name	**O**	**AN 2/30**
	N402	**156**	**State or Province Code** Code (Standard State/Province) as defined by appropriate government agency	**O**	**ID 2/2**
	N403	**116**	**Postal Code** Code defining international postal zone code excluding punctuation and blanks (zip code for United States)	**O**	**ID 3/11**
	N404	**26**	**Country Code** Code identifying the country ***Use only in transactions identifying the location of an entity as a country outside the fifty United States or its territories or possessions.***	**O**	**ID 2/3**
Not Used	**N405**	**309**	**Location Qualifier** Code identifying type of location	**X**	**ID 1/2**
Not Used	**N406**	**310**	**Location Identifier** Code which identifies a specific location	**O**	**AN 1/30**

Segment: **REF** **Reference Numbers**
Position: 100
Loop: N1 Optional
Level: Heading
Usage: Optional
Max Use: >1
Purpose: To specify identifying numbers.
Syntax Notes: **1** At least one of REF02 or REF03 is required.
Semantic Notes:
Comments:
Notes: ***Use as needed in all transactions to further identify the entity cited in N101.***

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	**REF01**	**128**	**Reference Number Qualifier** Code qualifying the Reference Number. W7 Commercial and Government Entity (CAGE) Code Code that identifies a commercial contractor authorized to do business with the U.S. Government ***Use to indicate the CAGE code of the organization (other than government) cited in N101 if N103 is other than code 33.***	**M ID 2/2**
	REF02	**127**	**Reference Number** Reference number or identification number as defined for a particular Transaction Set, or as specified by the Reference Number Qualifier.	**X AN 1/30**
Not Used	**REF03**	**352**	**Description** A free-form description to clarify the related data elements and their content	**X AN 1/80**

Segment: **PER** **Administrative Communications Contact**
Position: 110
Loop: N1 Optional
Level: Heading
Usage: Optional
Max Use: >1
Purpose: To identify a person or office to whom administrative communications should be directed
Syntax Notes:
1 If either PER03 or PER04 is present, then the other is required.
2 If either PER05 or PER06 is present, then the other is required.
3 If either PER07 or PER08 is present, then the other is required.
Semantic Notes:
Comments:
Notes:

1. Suppliers must, as a minimum, identify the emergency contact and telephone number, and provide information contact and telephone number.

2. Use PER05/PER06 and PER07/PER08 to provide a second and third, respectively, contact number associated with the named contact.

3. Repeat the use of 1/PER/110 as needed to provide all applicable points of contact for each entity identified by an iteration of the 1/N1/060 loop.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	**PER01**	**366**	**Contact Function Code** Code identifying the major duty or responsibility of the person or group named AT Material Safety Data Sheet Contact EM Emergency Contact ***Use to identify point of contact for emergency situations. Cite the office or third party representative (e.g., CHEMTREC) in PER02.*** HM Hazardous Material Contact ***Use as needed to identify general point of contact from which information regarding the hazards of the material may be obtained.*** TR Technical Marketing Representative ***Use as needed to identify the point of contact for general product information.***	**M ID 2/2**
	PER02	**93**	**Name** Free-form name ***Use to indicate the name of the person or office. Last name first, followed by first name is preferred. If the whole name exceeds 35 characters, use the initial of the first name.***	**O AN 1/35**

PER03 365 Communication Number Qualifier X ID 2/2

Code identifying the type of communication number

When citing a telephone or facsimile number, do not include dashes.

EM Electronic Mail

FX Facsimile

IT International Telephone

Include the country code.

TE Telephone

PER04 364 Communication Number X AN 1/80

Complete communications number including country or area code when applicable

PER05 365 Communication Number Qualifier X ID 2/2

Code identifying the type of communication number

EM Electronic Mail

EX Telephone Extension

Use only if PER03 is used citing either code TE or IT.

FX Facsimile

IT International Telephone

Include the country code.

TE Telephone

PER06 364 Communication Number X AN 1/80

Complete communications number including country or area code when applicable

PER07 365 Communication Number Qualifier X ID 2/2

Code identifying the type of communication number

EM Electronic Mail

EX Telephone Extension

Use only if PER05 is used citing either code TE or IT.

FX Facsimile

IT International Telephone

Include the country code.

TE Telephone

PER08 364 Communication Number X AN 1/80

Complete communications number including country or area code when applicable

PER09 443 Contact Inquiry Reference O AN 1/20

Additional reference number or description to clarify a contact number

Use as needed to further identify or qualify the point of contact or communication method. For example, use to cite "24-hours" or "Mon

-Fri" as needed.

Segment: **LIN** **Item Identification**
Position: 010
Loop: LIN Mandatory
Level: Detail
Usage: Mandatory
Max Use: 1
Purpose: To specify basic item identification data
Syntax Notes:
1 If either LIN04 or LIN05 is present, then the other is required.
2 If either LIN06 or LIN07 is present, then the other is required.
3 If either LIN08 or LIN09 is present, then the other is required.
4 If either LIN10 or LIN11 is present, then the other is required.
5 If either LIN12 or LIN13 is present, then the other is required.
6 If either LIN14 or LIN15 is present, then the other is required.
7 If either LIN16 or LIN17 is present, then the other is required.
8 If either LIN18 or LIN19 is present, then the other is required.
9 If either LIN20 or LIN21 is present, then the other is required.
10 If either LIN22 or LIN23 is present, then the other is required.
11 If either LIN24 or LIN25 is present, then the other is required.
12 If either LIN26 or LIN27 is present, then the other is required.
13 If either LIN28 or LIN29 is present, then the other is required.
14 If either LIN30 or LIN31 is present, then the other is required.
Semantic Notes:
1 LIN01 is the line item identification
Comments:
1 See the Data Dictionary for a complete list of ID's.
2 LIN02 through LIN31 provide for fifteen (15) different product/service ID's for each item. For Example: Case, Color, Drawing No., UPC No., ISBN No., Model No., SKU.
Notes:
1. Use only 2/LIN/010 in cancellation transactions to identify the material associated with the cancelled MSDS.

2. Use all necessary segments in the 2/LIN/010 loop in original and replacement transactions to identify the specific MSDS content.

3. Use data element 235/234 pairs to identify data pertinent to the transaction. Unless otherwise specified, the multiple codes listed for a single qualifier data element identify the range of possible data requirements. When needed, use the next available combination of data element 235/234 pairs to provide the necessary data.

4. The most desirable means of item identification is manufacturer's part number and CAGE Code. However, MSDS submitters may use other authorized coding alternatives to identify the material for which the MSDS is prepared. This information will be used in conjunction with an MSDS reference number, MSDS revision number, and MSDS effective date to uniquely identify any individual MSDS.

5. Manufacturers should use one 235/234 pair to identify the product by manufacturer's part number (Code MG) and immediately follow with another

235/234 pair identifying the associated manufacturer CAGE Code (Code ZB).

6. Distributors and repackagers should use one 235/234 pair to identify the product by vendor's part number (Code VP) and immediately follow with a 235/234 pair identifying the associated distributor or repackager CAGE Code (Code ZB). Distributors and repackagers should then use two additional 235/234 pairs to identify the product manufacturer's part number (Code MG) and CAGE Code (Code ZB), if known.

7. Suppliers should identify the product by manufacturer's part number (Code MG) in one 235/234 pair and immediately follow with a 235/234 pair identifying the associated manufacturer CAGE Code (Code ZB).

8. All submitters shall provide the National Stock Number (NSN), if known, but NOT as a substitute for part number and CAGE Code. The use of Code FS may be repeated in successive 235/234 pairs to identify multiple NSN's corresponding to the product.

9. Provide other identifying information, as required, to adequately identify the material for which the MSDS applies.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
	LIN01	**350**	**Assigned Identification** Alphanumeric characters assigned for differentiation within a transaction set ***Use to identify the Contract Line Item Number (CLIN), the Sub Contract Line Item Number (SUBCLIN), or the Exhibit Line Item Number (ELIN), if one is assigned.***	**O AN 1/11**
Must Use	**LIN02**	**235**	**Product/Service ID Qualifier** Code identifying the type/source of the descriptive number used in Product/Service ID (234) ***Use one of the following codes in the LIN02/LIN03 data element pair to identify the material. Use any code in subsequent data element pairs to further identify the material as needed.***	**M ID 2/2**

A2	Department of Defense Identification Code (DoDIC) Qualifies a code that uniquely identifies a type of explosive or ammunition
BN	Bar-Coded Serial Number
BP	Buyer's Part Number
CN	Commodity Name
CO	Chemical Abstract Service (CAS) Registry Number
FS	National Stock Number
IN	Buyer's Item Number

LT	Lot Number
MG	Manufacturer's Part Number
	Use to identify the manufacturer or supplier's part number.
UK	U.P.C./EAN Shipping Container Code (1-2-5-5-1)
	A 14-digit code that uniquely identifies the manufacturer's shipping unit, including the packaging indicator and check digit; the first digit is the packaging indicator, the next two digits are the number system characters, the next five digits are the manufacturer ID number, the second five digits are the item code, and the final digit is the check digit
UP	U.P.C. Consumer Package Code (1-5-5-1)
VN	Vendor's (Seller's) Item Number
VP	Vendor's (Seller's) Part Number
	Use to identify a distributor or repackager's part number.
VX	Vendor's Specification Number
ZB	Commercial and Government Entity (CAGE) Code
	A code that identifies a commercial contrator authorized to do business with the U.S. government
	Use in conjunction with code MG (or VP) to identify the manufacturer (or distributor).

Must Use	**LIN03**	**234**	**Product/Service ID**	**M**	**AN 1/40**
			Identifying number for a product or service		
	LIN04	**235**	**Product/Service ID Qualifier**	**X**	**ID 2/2**
			Code identifying the type/source of the descriptive number used in Product/Service ID (234)		
			Refer to 003050 Data Element Dictionary for acceptable code values.		
	LIN05	**234**	**Product/Service ID**	**X**	**AN 1/40**
			Identifying number for a product or service		
	LIN06	**235**	**Product/Service ID Qualifier**	**X**	**ID 2/2**
			Code identifying the type/source of the descriptive number used in Product/Service ID (234)		
			Refer to 003050 Data Element Dictionary for acceptable code values.		
	LIN07	**234**	**Product/Service ID**	**X**	**AN 1/40**
			Identifying number for a product or service		
	LIN08	**235**	**Product/Service ID Qualifier**	**X**	**ID 2/2**
			Code identifying the type/source of the descriptive number used in Product/Service ID (234)		
			Refer to 003050 Data Element Dictionary for acceptable code values.		
	LIN09	**234**	**Product/Service ID**	**X**	**AN 1/40**
			Identifying number for a product or service		

LIN10	**235**	**Product/Service ID Qualifier**	**X**	**ID 2/2**
		Code identifying the type/source of the descriptive number used in Product/Service ID (234)		
		Refer to 003050 Data Element Dictionary for acceptable code values.		
LIN11	**234**	**Product/Service ID**	**X**	**AN 1/40**
		Identifying number for a product or service		
LIN12	**235**	**Product/Service ID Qualifier**	**X**	**ID 2/2**
		Code identifying the type/source of the descriptive number used in Product/Service ID (234)		
		Refer to 003050 Data Element Dictionary for acceptable code values.		
LIN13	**234**	**Product/Service ID**	**X**	**AN 1/40**
		Identifying number for a product or service		
LIN14	**235**	**Product/Service ID Qualifier**	**X**	**ID 2/2**
		Code identifying the type/source of the descriptive number used in Product/Service ID (234)		
		Refer to 003050 Data Element Dictionary for acceptable code values.		
LIN15	**234**	**Product/Service ID**	**X**	**AN 1/40**
		Identifying number for a product or service		
LIN16	**235**	**Product/Service ID Qualifier**	**X**	**ID 2/2**
		Code identifying the type/source of the descriptive number used in Product/Service ID (234)		
		Refer to 003050 Data Element Dictionary for acceptable code values.		
LIN17	**234**	**Product/Service ID**	**X**	**AN 1/40**
		Identifying number for a product or service		
LIN18	**235**	**Product/Service ID Qualifier**	**X**	**ID 2/2**
		Code identifying the type/source of the descriptive number used in Product/Service ID (234)		
		Refer to 003050 Data Element Dictionary for acceptable code values.		
LIN19	**234**	**Product/Service ID**	**X**	**AN 1/40**
		Identifying number for a product or service		
LIN20	**235**	**Product/Service ID Qualifier**	**X**	**ID 2/2**
		Code identifying the type/source of the descriptive number used in Product/Service ID (234)		
		Refer to 003050 Data Element Dictionary for acceptable code values.		
LIN21	**234**	**Product/Service ID**	**X**	**AN 1/40**
		Identifying number for a product or service		
LIN22	**235**	**Product/Service ID Qualifier**	**X**	**ID 2/2**
		Code identifying the type/source of the descriptive number used in Product/Service ID (234)		
		Refer to 003050 Data Element Dictionary for acceptable code values.		
LIN23	**234**	**Product/Service ID**	**X**	**AN 1/40**
		Identifying number for a product or service		

LIN24	**235**	**Product/Service ID Qualifier**	**X**	**ID 2/2**
		Code identifying the type/source of the descriptive number used in Product/Service ID (234) Refer to 003050 Data Element Dictionary for acceptable code values.		
LIN25	**234**	**Product/Service ID**	**X**	**AN 1/40**
		Identifying number for a product or service		
LIN26	**235**	**Product/Service ID Qualifier**	**X**	**ID 2/2**
		Code identifying the type/source of the descriptive number used in Product/Service ID (234) Refer to 003050 Data Element Dictionary for acceptable code values.		
LIN27	**234**	**Product/Service ID**	**X**	**AN 1/40**
		Identifying number for a product or service		
LIN28	**235**	**Product/Service ID Qualifier**	**X**	**ID 2/2**
		Code identifying the type/source of the descriptive number used in Product/Service ID (234) Refer to 003050 Data Element Dictionary for acceptable code values.		
LIN29	**234**	**Product/Service ID**	**X**	**AN 1/40**
		Identifying number for a product or service		
LIN30	**235**	**Product/Service ID Qualifier**	**X**	**ID 2/2**
		Code identifying the type/source of the descriptive number used in Product/Service ID (234) Refer to 003050 Data Element Dictionary for acceptable code values.		
LIN31	**234**	**Product/Service ID**	**X**	**AN 1/40**
		Identifying number for a product or service		

Segment: **PID** **Product/Item Description**
Position: 020
Loop: LIN Mandatory
Level: Detail
Usage: Optional
Max Use: >1
Purpose: To describe a product or process in coded or free-form format
Syntax Notes:
1 If PID04 is present, then PID03 is required.
2 At least one of PID04 or PID05 is required.
3 If PID07 is present, then PID03 is required.
4 If PID08 is present, then PID03 is required.
Semantic Notes:
1 Use PID03 to indicate the organization that publishes the code list being referred to.
2 PID04 should be used for industry-specific product description codes.
3 PID08 describes the physical characteristics of the product identified in PID04. A ``Y'' indicates that the specified attribute applies to this item. A ``N'' indicates it does not apply. Any other value is indeterminate.
Comments:
1 If PID01 = ``F'', then PID05 is used. If PID01 = ``S'', then PID04 is used. If PID01 = ``X'', then both PID04 and PID05 are used.
2 Use PID06 when necessary to refer to the product surface or layer being described in the segment.
3 PID07 specifies the individual code list of the agency specified in PID03.
Notes: ***Use this segment only if the product applicable to the MSDS cannot be adequately identified by a code value cited in the LIN segment.***

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	**PID01**	**349**	**Item Description Type** Code indicating the format of a description F Free-form S Structured (From Industry Code List) X Semi-structured (Code and Text)	**M ID 1/1**
Must Use	**PID02**	**750**	**Product/Process Characteristic Code** Code identifying the general class of a product or process characteristic 08 Product ***Use to indicate a complete set or kit. When used, provide a general description, including the intended use, of the set or kit in PID05.*** 09 Sub-product ***Use to indicate a component of a kit and provide a description of the component in PID05.*** 80 MILSPEC (Military Specification) ***Use to identify a Military Specification (MILSPEC) or Standard (MILSTD).***	**O ID 2/3**

			81	FEDSPEC (Federal Specification)		
			82	FED-STD (Federal Standard)		
			83	CID (Commercial Item Description)		
			84	Special Specification		
				Use in conjunction with PID04 to identify an industry specification.		
			CCN	Common Chemical Name		
			CHF	Chemical Family		
			SYN	Synonym		
				Use to indicate another name under which the product is sold.		
			TRN	Trade Name		
				Use to indicate the brand name under which the product is sold.		
	PID03	**559**	**Agency Qualifier Code**		**X**	**ID 2/2**
			Code identifying the agency assigning the code values			
			Use any code.			
			Refer to 003050 Data Element Dictionary for acceptable code values.			
	PID04	**751**	**Product Description Code**		**X**	**AN 1/12**
			A code from an industry code list which provides specific data about a product characteristic			
	PID05	**352**	**Description**		**X**	**AN 1/80**
			A free-form description to clarify the related data elements and their content			
			Use to identify, in free form text, the product applicable to the MSDS.			
Not Used	**PID06**	**752**	**Surface/Layer/Position Code**		**O**	**ID 2/2**
			Code indicating the product surface, layer or position that is being described			
Not Used	**PID07**	**822**	**Source Subqualifier**		**O**	**AN 1/15**
			A reference that indicates the table or text maintained by the Source Qualifier			
Not Used	**PID08**	**1073**	**Yes/No Condition or Response Code**		**O**	**ID 1/1**
			Code indicating a Yes or No condition or response			

Segment: **MSS** **Material Safety Data Sheet Section Information**
Position: 030
Loop: MSS Optional
Level: Detail
Usage: Optional
Max Use: 1
Purpose: To identify the report section
Syntax Notes:
1 At least one of MSS01 MSS02 or MSS06 is required.
2 Only one of MSS01 or MSS06 may be present.
Semantic Notes:
1 MSS02 is a text description of the report section.
2 MSS03 indicates the state or province issuing the regulations that determine what is reported in this section of the Material Safety Data Sheet (MSDS).
3 MSS04 identifies the country issuing the regulations that determine what is reported in this section.
Comments:
1 MSS05 indicates whether any data in this report section has changed since the last revision of this report.
2 MSS07 indicates that the safety characteristics or hazard name is included in the name of the MSDS section or subsection.
Notes:

1. Use the 2/MSS/030 loop only in original and replacement submissions to identify the applicable ANSI Z400 section and subsection headings and the associated MSDS data. Repeat the loop for each section and subsection of the ANSI Z400 standard. Sections 1-10 are required by the Occupational Safety and Health Administration 's Hazard Communication Standard. Sections 11-16 include international requirements and may not always apply. For any section where information is not provided, not applicable, or not known state the appropriate case (e.g., Not Applicable) in the appropriate occurrence of 2/MSG/050.

2. This implementation convention reflects an intention to use the transaction set for automated import into application software. Use MSS06 and MSS07 to identify section and subsection headings. Cite the applicable section or subsection number in MSS06 and the heading code value in MSS07. If code values for subsection topics are not available, use only MSS02 to explicitly state the subsection number and topic title.

3. The transaction set may be used for print-only purposes, i.e., not intended for application software. Use MSS02, therefore, to explicitly identify section and subsection headings.

4. HAZCOM Warning Label information is identified in Section 16 (Other Information) as a discrete iteration of the 2/MSS/030 loop. Separate this information from any additional Other Information to be carried in Section 16 by identifying it as a subsection in MSS02 as follows: "HAZCOM Warning Label". In addition, use code LAB in MSS07 to identify the proper subsection heading.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes	
Not Used	**MSS01**	**820**	**Report Section Name Code** Code identifying the name of the section of the report	**X**	**ID 2/2**
	MSS02	**352**	**Description** A free-form description to clarify the related data elements and their content ***Use to identify the section and subsection headings only when MSS07 does not provide the necessary coding capability.***	**X**	**AN 1/80**
Not Used	**MSS03**	**156**	**State or Province Code** Code (Standard State/Province) as defined by appropriate government agency	**O**	**ID 2/2**
Not Used	**MSS04**	**26**	**Country Code** Code identifying the country	**O**	**ID 2/3**
Not Used	**MSS05**	**259**	**Change Type Code** Code indicating change type	**O**	**ID 1/1**
	MSS06	**1472**	**Report Section Number** Number identifying a specified section or subsection of a report ***Use in conjunction with MSS07 to identify ANSI Z400 section and subsection heading numbers. As an example, for section 3 titled "Hazards Identification", cite "300" to indicate section number (3.0) and "310" to indicate subsection number (3.1) corresponding to appropriate subsection topic.***	**X**	**N2 3/4**
	MSS07	**821**	**Safety Characteristic/Hazard Code** Code indicating precautionary measures, means of treatment and hazard information and warnings ***Use in conjunction with MSS06 to identify the ANSI Z400 section heading name and subsection topic, if available.***	**O**	**ID 3/3**

CI2 Chemical Product and Company Information

Use to identify section heading for information contained in section 1, Chemical Product and Company Information.

CO2 Composition or Information on Ingredients

Use to identify section heading for information contained in section 2, Composition/Information on Ingredients.

DCL Disclaimer

Use as needed in section 16, Other Information.

DI2 Disposal Considerations

Use to identify section heading for information contained in section 13, Disposal Considerations.

EN2 Ecological Information

Use to identify section heading for information

	contained in section 12, Ecological Information.
ENG	Engineering Controls
	Mechanical or structural devices and techniques for preventing or mitigating a hazardous condition, e.g. ventilation device, static hood, splashguards
	Use to identify subsection 8.1, Engineering Controls.
EO2	Emergency Overview
	Use to identify subsection 3.1, Emergency Overview.
EP2	Exposure Controls or Personal Protection
	Use to identify section heading for information contained in section 8, Exposure Controls, Personal Protection.
EXI	Exposure Information
	Use to identify subsection 8.3, Exposure Guidelines.
FA2	First Aid Measures
	Use to identify section heading for information contained in section 4, First Aid Measures.
FE2	Fire Fighting Measures
	Use to identify section heading for information contained in section 5, Fire Fighting Measures.
FIP	First Aid Procedures
	Use to identify subsection 4.1, First Aid Procedures.
HAI	Handling Information
	Use to identify subsection 7.1, Handling.
HH2	Hazards Identification
	Use to identify section heading for information contained in section 3.0, Hazards Identification.
HI2	Potential Health Effects
	Use to identify subsection 3.2, Potential Health Effects.
IA2	Other Information
	Use to identify section heading for information contained in section 16, Other Information.
LAB	Label Text
	Use to identify subsection 16, Other Information.
NTZ	Note to Physician
	Use to identify subsection 4.2, Note to Physicians.
PD2	Physical and Chemical Properties
	Use to identify section heading for information contained in section 9, Physical and Chemical Properties.

PPZ	Personal Protection Equipment
	Use to identify subsection 8.2, Personal protective equipment.
RE2	Stability and Reactivity Information
	Use to identify section heading for information contained in section 10, Stability and Reactivity.
RG2	Regulatory Information
	Use to identify section heading for information contained in section 15, Regulatory Information.
SH2	Transport Information
	Use to identify section heading for information contained in section 14, Transport Information.
SL2	Accidental Release Measures
	Use to identify section heading for information contained in section 6, Accidental Release Measures.
ST2	Handling and Storage
	Use to identify section heading for information contained in section 7, Handling and Storage.
STA	Storage Conditions
	Use to identify subsection 7.2, Storage.
TX2	Toxocological Information
	Use to identify section heading for information contained in section 11, Toxicological Information.

Segment: **MSG** **Message Text**
Position: 050
Loop: MSS Optional
Level: Detail
Usage: Optional
Max Use: >1
Purpose: To provide a free form format that would allow the transmission of text information.
Syntax Notes:
Semantic Notes:
Comments: **1** MSG02 is not related to the specific characteristics of a printer, but identifies top of page, advance a line, etc.
Notes: ***1. Use of the 2/MSG/050 segment is reserved for section and subsection introductory comments relevant to the section or subsection as a whole. Because of the limited processing capability associated with a text block, specific data items (especially measurements, numerical values, and specific code values) are to be carried in the appropriate segments within the 2/SD1/060, 2/LX/115, and 2/SD1/170 loops.***

2. Use multiple repetitions of 2/MSG/050 to convey the necessary text.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	**MSG01**	**933**	**Free-Form Message Text**	**M AN 1/264**
			Free-form message text	
	MSG02	**934**	**Printer Carriage Control Code**	**O ID 2/2**
			A field to be used for the control of the line feed of the receiving printer	
			Use MSG02 codes as needed to accurately portray the text for when the transaction will be used for print-only purposes.	
			AT Advanced Three Lines Before Print	
			DS Advance two lines before print	
			LC Line Continuation	
			NP Advance to next page before print	
			NS No advance before print	
			SS Advance to new line before print	

Segment: **SD1** **Safety Data**
Position: 060
Loop: SD1 Optional
Level: Detail
Usage: Optional
Max Use: 1
Purpose: To provide safety data information to recipients of the transaction, including identification of the hazard that the material being described represents, and the organization or party that declared this material to be a hazard or which established exposure limits or other guidelines for that material

Syntax Notes:
1 At least one of SD105 or SD106 is required.

Semantic Notes:
1 SD106 is a free-form description of a safety characteristic or hazard.
2 SD107 specifies the state or province issuing the regulation that applies to the safety data included in this segment.
3 SD108 specifies the country issuing the regulation that applies to the safety data included in this segment.

Comments:
1 SD101 indicates the format of this safety data information.
2 SD103 identifies the organization responsible for the code used in SD105 or the free-form text in SD106.
3 SD104 is a reference that indicates the table or text maintained by the source qualifier (SD103).
4 SD105 is a code from the organization list which provides specific data about a safety characteristic or hazard.

Notes:

1. Use the 2/SD1/060 loop to identify safety or hazards data associated with the specific MSDS section or with the products as a whole. Use the 2/MSG/080 segment to carry long, unbroken text blocks associated with subsection topic identified in the 2/SD1/060 segment.

2. Use the 2/SD1/060 loop in subsection 3.2, Potential Health Effects, to describe the symptoms of and health hazards associated with overexposure to hazardous material. Include relevant route(s) of entry and identify target organs.

3. Use the 2/SD1/060 loop in subsection 4.1, First Aid Procedures, to describe the appropriate actions to take for exposure/overexposure to hazardous substance(s) based upon route(s) of entry identified in subsection 3.2.

4. Use the 2/SD1/060 loop in subsection 8.2, Personal Protective Equipment, to identify equipment required to minimize potential for illness or injury due to chemical exposure. Measures should correspond to routes of entry identified in subsection 3.2.

5. Use the 2/SD1/060 loop in section 10, Stability and Reactivity, to describe conditions potentially resulting in hazardous chemical reactions.

6. Use the 2/SD1/060 loop as needed in section 11, Toxicological Information, to describe toxicity data.

7. Use the 2/SD1/060 loop as needed in section 12, Ecological Information, to provide information for evaluating product's potential impact on environment to include birds, fish, and plants. The information should cover, as a minimum, ecotoxicological information and known environmental fate.

8. Use the 2/SD1/060 loop as needed in section 14, Transport Information, to identify basic shipping classification information. Minimum data provided should include proper shipping name, hazard class, and applicable identification number (e.g., UN Number).

9. Use the 2/SD1/060 loop as needed in section 15, Regulatory Information, to identify U.S., international, and/or state regulations which apply to the material or its components. Explicitly identify applicability to TSCA, CERCLA, and SARA Title III, as a minimum.

Data Element Summary

	Ref. Des.	Data Element	Name		Attributes
Must Use	**SD101**	**349**	**Item Description Type**		**M ID 1/1**
			Code indicating the format of a description		
			F	Free-form	
			S	Structured (From Industry Code List)	
			X	Semi-structured (Code and Text)	
Must Use	**SD102**	**821**	**Safety Characteristic/Hazard Code**		**M ID 3/3**
			Code indicating precautionary measures, means of treatment and hazard information and warnings		
			CAR	Carcinogenicity	
				Use as needed in section 11, Toxicological Information, to describe the product's known or suspected properties as a carcinogen.	
			CON	Conditions to Avoid	
				Use in section 10 to identify conditions which could lead to hazardous chemical reactions.	
			DCL	Disclaimer	
				Use as needed in section 16 to provide disclaimer qualifications.	
			DEH	Hazardous Decomposition Products	
				Use in section 10 identify known/anticipated hazardous materials resulting from product oxidation, heating, or chemical reaction.	
			EFX	Effects of Overexposure	
				Use as needed in section 3.2 to describe effects and symptoms of overexposure.	
			EXC	Ecotoxicological Information	

	Use in section 12 to describe acute and long-term ecotoxicity effects.
EYA	Eye Contact: Acute Exposure
	Use as needed in section 11, Toxicological Information, to identify acute health effects associated with exposure to the product.
EYC	Eye Contact: Chronic Exposure
	Use as needed in section 11, Toxicological Information, to identify chronic health effects associated with exposure to the product.
EYF	Eye Contact
	Use in subsection 4.1 to describe first aid procedures when identified as a route of entry in subsection 3.2.
FAT	Environmental Fate (i.e., Oxidized, Photodegraded, etc.)
	Use in section 12 to identify environmental fate of material.
FAZ	Extinguishing Media
	Use as needed in section 5 to identify appropriate extinguishing media.
FEH	Fire and Explosion Hazards
	Use as needed in section 5 to describe fire and explosion hazards.
FLC	Flammability Conditions
	Conditions under which the flammability hazards, precautions, or limits apply
	Use as needed in section 5 to describe flammability conditions.
GCA	General Controls
	Use in subsection 8.2 to identify any special equipment or precautions required to prevent injury or illness.
GMA	General Measures
	Use as needed in section 5 to describe general safety measures related to fire and explosion hazards.
HCP	Hazardous Product of Combustion
	One or more different hazardous materials produced when the subject material burns
	Use in section 5 to identify hazardous combustion products.
IGA	Ingestion: Acute Exposure

	Use as needed in section 11, Toxicological Information, to identify acute health effects associated with exposure to the product.
IGC	Ingestion: Chronic Exposure
	Use as needed in section 11, Toxicological Information, to identify chronic health effects associated with exposure to the product.
IGZ	Ingestion
	Use in subsection 4.1 to describe first aid procedures when identified as a route of entry in subsection 3.2.
IHA	Inhalation: Acute Exposure
	Use as needed in section 11, Toxicological Information, to identify acute health effects associated with exposure to the product.
IHC	Inhalation: Chronic Exposure
	Use as needed in section 11, Toxicological Information, to identify chronic health effects associated with exposure to the product.
IHZ	Inhalation
	Use in subsection 4.1 to describe first aid procedures when identified as a route of entry in subsection 3.2.
INC	Incompatibility
	Use in section 10 to identify materials incompatible with the product.
MCE	Medical Conditions Aggravated by Exposure
	Use as needed in section 4.2 to identify potential medical conditions aggravated by exposure.
MUT	Mutagenicity
	Use as needed in section 11, Toxicological Information, to describe the product's known or suspected properties as a mutagen.
POL	Hazardous Polymerization
	Use in section 10 to indicate if and under what conditions hazardous polymerization will occur. Cite "WILL OCCUR" or "WILL NOT OCCUR" in SDI06 and use 2/MSG/080 as needed to further describe those conditions in which hazardous polymerization is likely or possible.
PPA	Personal Protection: Additional Equipment
	Use to identify additional equipment required for minimizing the risk associated with handling the product.

PPC	Personal Protection: Clothing
	Use in subsection 8.2 to identify equipment required to minimize risk of injury when identified as a route of entry.
PPD	Personal Protection: Eye/Face
	Use in subsection 8.2 to identify equipment required to minimize risk of injury when identified as a route of entry.
PPR	Personal Protection: Respiratory
	Use in subsection 8.2 to identify equipment required to minimize risk of injury when identified as a route of entry.
PPS	Personal Protection: Skin
	Use in subsection 8.2 to identify equipment required to minimize risk of injury when identified as a route of entry.
PR2	Preparation and Revision Information
	Use as needed in section 16 to provide revision information.
PRE	Primary Route(s) of Entry: Eye Contact
	Use in subsection 3.2 to identify as a route of entry.
PRI	Primary Route(s) of Entry: Inhalation
	Use in subsection 3.2 to identify as a route of entry.
PRO	Primary Route(s) of Entry: Oral
	Use in subsection 3.2 to identify as a route of entry.
PRS	Primary Route(s) of Entry: Skin Contact
	Use in subsection 3.2 to identify as a route of entry.
RCA	Regulatory Information or Controls
	Use in section 15 to identify a regulation, statute, or other control to which the material is subject.
REP	Reproduction
	Use as needed in section 11, Toxicological Information, to describe the product's known or suspected effects on a reproductive organs.
SBY	Stability
	Use in section 10 to indicate material's degree of stability under normal conditions. Cite "STABLE" or "UNSTABLE" in SD106 and use 2/MSG/080 as needed to further describe product's reactive properties.
SKA	Skin Contact: Acute Exposure
	Use as needed in section 11, Toxicological

Information, to identify acute health effects associated with exposure to the product.

SKC Skin Contact: Chronic Exposure

Use as needed in section 11, Toxicological Information, to identify chronic health effects associated with exposure to the product.

SKT Skin Contact

Use in subsection 4.1 to describe first aid procedures when identified as a route of entry in subsection 3.2.

SNS Sensitization

Use as needed in section 11, Toxicological Information, to describe the product's properties as a sensitizing agent.

SPF Special Fire Fighting Instructions

Use as needed in section 5 to describe special precautions for fire fighting.

TER Teratogenicity

Use as needed in section 11, Toxicological Information, to describe the product's known or suspected properties as a teratogen.

TRH Transportation Hazard

Use in section 14 to identify applicable information related transport hazards.

SD103 559 Agency Qualifier Code O ID 2/2

Code identifying the agency assigning the code values

Use as needed in section 15 to identify the agency or organization responsible for maintaining or administering the regulation, statute, or code list cited in SD104 or for the general description of warnings/hazards cited in SD106.

DF Department of Defense (DoD)

DO United States Department of Transportation (DOT)

EP United States Environmental Protection Agency (EPA)

Use in section 15 when identifying regulations or statutes administered by the EPA. Examples include CAA, CWA, CERCLA, RCRA, SARA Title III, and TSCA.

IA International Agency for Research on Cancer (IARC)

MC Manufacturing Company

MP Material Safety Data Sheet (MSDS) Provider

OS United States Occupational Safety and Health Administration (OSHA)

Use as needed when identifying regulations or statutes administered by OSHA; for example, the Hazard Communication Standard (HCS).

TA	Air Transport Association of America
UN	United Nations (UN)
WH	Canadian Workplace Hazardous Materials Information System (WHMIS)

SD104 822 Source Subqualifier O AN 1/15

A reference that indicates the table or text maintained by the Source Qualifier

Use in section 15 to identify a regulation, statute, or code list table. If used, SD103 cites the organization maintaining or administering the regulation or code list. For example, SD103 may cite code "EP", indicating the Environmental Protection Agency, and SD104 may contain "SARA Title III". Use SD105 to cite section or article number.

SD105 751 Product Description Code X AN 1/12

A code from an industry code list which provides specific data about a product characteristic

Use as needed in section 15 to identify a section, article, code from the regulation or table identified in SD104. For example, if SD104 cites "SARA Title III," SD105 can be used to cite "Section 302," indicating the material is regulated as an Extremely Hazardous Substance (EHS).

SD106 352 Description X AN 1/80

A free-form description to clarify the related data elements and their content

Use in section 10 to identify the product as "stable" or "unstable," and the hazardous polymerization potential as "will occur" or "will not occur." Use in section 15 to provide a brief description of relevant regulation or statute. Use the 2/MSG/080 segment to fully describe the regulation to which the material is subject.

SD107 156 State or Province Code O ID 2/2

Code (Standard State/Province) as defined by appropriate government agency

Use as needed in section 15 to identify the state or province responsible for the regulation cited in SD104.

SD108 26 Country Code O ID 2/3

Code identifying the country

Use as needed in section 15 to identify the country issuing the regulation cited in SD104. Use only to identify an entity outside the fifty United States or U.S. territories.

Segment: **TD4** **Carrier Details (Special Handling, or Hazardous Materials, or Both)**
Position: 074
Loop: SD1 Optional
Level: Detail
Usage: Optional
Max Use: >1
Purpose: To specify transportation special handling requirements, or hazardous materials information, or both
Syntax Notes:
1 At least one of TD401 TD402 or TD404 is required.
2 If TD402 is present, then TD403 is required.
Semantic Notes:
Comments:
Notes:

1. Use in section 14, Transport Information, to identify the material's basic description and the agency or organization maintaining that description. The basic description should consist of Proper Shipping Name, Hazard Class, Identification Number (UN or NA), and Packing Group.

2. When citing a code from an industry-recognized code list, use TD401 to identify the material as hazardous, TD402 to identify the agency or organization maintaining the table or manual, TD403 to cite the identification number (UN or NA), and TD404 to identify the proper shipping name, hazard class or division, packing group, and any other relevant information.

3. When identifying general transportation considerations (i.e., no agency codes), use only TD404 to describe the product's transportation hazards.

4. Use multiple repetitions of 2/TD4/074 as needed.

Data Element Summary

Ref. Des.	Data Element	Name	Attributes
TD401	**152**	**Special Handling Code**	**X ID 2/3**
		Code specifying special transportation handling instructions	
		Use only to identify the product as hazardous material.	
		HM Endorsed as Hazardous Material	
TD402	**208**	**Hazardous Material Code Qualifier**	**X ID 1/1**
		Code which qualifies the Hazardous Material Class Code (209)	
		A International Civil Aviation Organization (ICAO) Code	
		Use to identify transport information referenced in ICAO table 2-14, Dangerous Goods List.	
		D Hazardous Materials ID, DOT	
		Use to identify transport information referenced in 49 CFR Table 172.101.	
		F Air Force Regulation 71-4	

Use to identify material subject to shipment by military air under AFJ MAN 24-204 (previously identified as AR 71-4).

I Intergovernmental Maritime Organization (IMO) Code

Use to identify material subject to International Maritime Dangerous Goods Code (IMDG).

R Bureau of Explosives (BOE) 6000 Tariff

T International Air Transport Association Dangerous Goods Code List

Use to identify material subject to IATA Dangerous Goods Regulations, table 4.2.

U United Nations

Use only as needed to explicitly identify the UN number.

TD403 209 Hazardous Material Class Code X AN 2/4

Code specifying the kind of hazard for a material

Use to cite the identification number from the table or manual cited in TD402.

TD404 352 Description X AN 1/80

A free-form description to clarify the related data elements and their content

Use to further identify transportation hazards associated with material as defined by organization cited in TD402. Minimum description should include Proper Shipping Name, Hazard Class or Division, and Packing Group. Technical and chemical names or hazard label identifications should also be included, when appropriate. For example, cite "Gasoline, Hazard Class 3, Packing Group II."

Segment: **MSG** **Message Text**
Position: 080
Loop: SD1 Optional
Level: Detail
Usage: Optional
Max Use: >1
Purpose: To provide a free form format that would allow the transmission of text information.
Syntax Notes:
Semantic Notes:
Comments: **1** MSG02 is not related to the specific characteristics of a printer, but identifies top of page, advance a line, etc.
Notes: ***1. Use 2/MSG/080 to provide narrative associated with data identified in the 2/SD1/060 loop. Use to carry text associated with subsection topics identified in 2/SD1/060.***

2. Use multiple repetitions of 2/MSG/080 to convey the necessary text.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	**MSG01**	**933**	**Free-Form Message Text** Free-form message text	**M AN 1/264**
	MSG02	**934**	**Printer Carriage Control Code** A field to be used for the control of the line feed of the receiving printer ***Use MSG02 codes as needed to accurately portray the text for when the transaction will be used for print-only purposes.*** AT Advanced Three Lines Before Print DS Advance two lines before print LC Line Continuation NP Advance to next page before print NS No advance before print SS Advance to new line before print	**O ID 2/2**

Segment: **LX** **Assigned Number**
Position: 115
Loop: LX Optional
Level: Detail
Usage: Optional
Max Use: 1
Purpose: To reference a line number in a transaction set
Syntax Notes:
Semantic Notes:
Comments:
Notes: ***1. Use the 2/LX/115 loop as required to identify specific components, characteristics, and physical properties associated with the product as a whole.***

2. Use the 2/LX/115 loop in section 2, Composition/Information on Ingredients, to identify product composition by ingredients and to classify components as hazardous or non-hazardous. Use the 2/SD1/170 loop to further identify permissible exposure limits and guidelines for each hazardous component, or alternatively, for all components.

3. Use the 2/LX/115 loop in section 5, Fire Fighting Measures, to identify flammable properties associated with the product. As a minimum, cite flammability limits, flashpoint, and autoignition temperature.

4. Use the 2/LX/115 loop in section 9, Physical and Chemical Properties, to further identify product characteristics.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	**LX01**	**554**	**Assigned Number** Number assigned for differentiation within a transaction set ***A unique sequence number assigned by the originator of the transaction set, starting with the number 1 and going progressively higher, e.g., 1, 2, 3, etc.***	**M N0 1/6**

Segment: **CID** **Characteristic/Class ID**
Position: 120
Loop: LX Optional
Level: Detail
Usage: Optional
Max Use: 1
Purpose: To specify the general class or specific characteristic upon which test results are being reported or are to be taken
Syntax Notes:
1 At least one of CID01 CID02 CID04 or CID05 is required.
2 If either CID03 or CID04 is present, then the other is required.
3 If CID06 is present, then both CID03 and CID04 are required.
4 If CID07 is present, then at least one of CID04 or CID05 is required.
Semantic Notes:
Comments:
1 CID06 specifies the individual code list of the agency specified in CID03.
2 CID07 refers to whether or not the characteristic identified in CID04 or CID05 or both is affected by the product change. If it is affected, the value is "Y". A value of "N" is used when it is known that it will not be affected. Any other value indicates it is indeterminate.
Notes:
1. Use the 2/CID/120 segment to identify product components or qualitative properties.

2. Use the 2/CID/120 segment in section 2 to identify product components. As a minimum, all hazardous ingredients must be identified. Use CID02 to identify component type. Use CID03 and CID04 to identify registry and number (e.g., CAS and CAS No.). If available, provide the chemical name in CID05. If registry and number are not available, CID05 must be used.

3. Use the 2/CID/120 segment in section 9 to qualitatively describe product physical properties. Use only CID01, to identify the product characteristic, and CID05 to provide the description.

Data Element Summary

Ref. Des.	Data Element	Name	Attributes
CID01	**738**	**Measurement Qualifier** Code identifying a specific product or process characteristic to which a measurement applies ***Use the following codes, as needed, in section 9, Physical and Chemical Properties, only to qualitatively describe product characteristics.*** APP Appearance The visible impression of an item COL Color The aspect of appearance dependent upon the wavelength of incident, reflected or transmitted, and observed light ODR Odor	**X ID 1/3**

				The quality of a substance that stimulates the olfactory organ		
			S8	Solubility		
	CID02	**750**	**Product/Process Characteristic Code**		**X**	**ID 2/3**
			Code identifying the general class of a product or process characteristic			
			HZ	Hazardous Material		
			ING	Ingredient		
			Use in section 2 to identify product components. Cite ingredient's CAS or other registry number in CID04.			
			NH	Non-Hazardous Material		
	CID03	**559**	**Agency Qualifier Code**		**X**	**ID 2/2**
			Code identifying the agency assigning the code values			
			Use only in section 2 to identify the source for the component number identified in CID04.			
			AS	Assigned by Seller		
			CA	Chemical Abstract Services (CAS)		
			Use to identify a component by Chemical Abstract Services CAS number.			
			MC	Manufacturing Company		
			Use to identify a proprietary component. Cite "proprietary" or "trade secret" as appropriate in CID04.			
	CID04	**751**	**Product Description Code**		**X**	**AN 1/12**
			A code from an industry code list which provides specific data about a product characteristic			
			Use in section 2 to cite CAS or other registry number. Include dashes and blanks as appropriate. For proprietary components, cite "proprietary" or "trade secret" as appropriate.			
	CID05	**352**	**Description**		**X**	**AN 1/80**
			A free-form description to clarify the related data elements and their content			
			Use in section 2 to identify components by preferred chemical name, or, if not available, by common trade name. Must use if not using CID03 and CID04.			
	CID06	**822**	**Source Subqualifier**		**O**	**AN 1/15**
			A reference that indicates the table or text maintained by the Source Qualifier			
			Use in section 2 only as needed to identify individual code list maintained by organization cited in CID03.			
Not Used	**CID07**	**1073**	**Yes/No Condition or Response Code**		**O**	**ID 1/1**
			Code indicating a Yes or No condition or response			

Segment: **MEA** **Measurements**
Position: 130
Loop: LX Optional
Level: Detail
Usage: Optional
Max Use: >1
Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances, and weights (See Figures Appendix for example of use of C001)
Syntax Notes:
1 At least one of MEA03 MEA05 MEA06 or MEA08 is required.
2 If MEA05 is present, then MEA04 is required.
3 If MEA06 is present, then MEA04 is required.
4 If MEA07 is present, then at least one of MEA03 MEA05 or MEA06 is required.
5 Only one of MEA08 or MEA03 may be present.
Semantic Notes:
1 MEA04 defines the unit of measure for MEA03, MEA05, and MEA06.
Comments:
1 When citing dimensional tolerances, any measurement requiring a sign (+ or -), or any measurement where a positive (+) value cannot be assumed, use MEA05 as the negative (-) value and MEA06 as the positive (+) value.
Notes:

1. Use the 2/MEA/130 segment in section 2 to identify the product composition for each ingredient cited in the 2/CID/120 segment. Identify composition by percentage weight, if available. Specific, accurate composition information is essential due to EPCRA reporting requirements. If necessary to identify a percentage range, when exact composition is unknown, use MEA05 and MEA06 to specify the range.

2. Use the 2/MEA/130 segment in section 5 to identify actual values for flammability limits, flashpoint, and autoignition temperature.

3. Use the 2/MEA/130 segment in section 9 to identify numerical values associated with the product's physical and chemical characteristics.

4. Repeat the use of the 2/MEA/130 segment as needed.

Data Element Summary

Ref. Des.	Data Element	Name	Attributes
MEA01	**737**	**Measurement Reference ID Code** Code identifying the broad category to which a measurement applies ***Use as needed to distinguish source of provided data.*** CH Chemistry TR Test Results Indicates that the data to follow are the results test measurements	**O ID 2/2**
MEA02	**738**	**Measurement Qualifier** Code identifying a specific product or process characteristic to which a measurement applies	**O ID 1/3**

			AK	Volatile Organic Compounds (VOCs) Organic compounds whose existence is calculable or detectable by methods specified by the U.S. Environmental Protection Agency		
			BP	Boiling Point		
			COT	Content The amount of specified material contained ***Use in section 2 when identifying ingredient composition in MEA03 or MEA05 and MEA06.***		
			EVR	Evaporation Rate		
			FG	Freezing Point		
			FML	Flammability Limits ***Use in section 5 to identify upper and lower explosive limits. Use MEA05/MEA06 to identify the range.***		
			FP	Flashpoint		
			IGA	Autoignition Temperature		
			MH	Melting Point		
			MW	Molecular Weight		
			PHA	pH		
			S8	Solubility		
			TEE	Autodecomposition Temperature		
			VAD	Vapor Density		
			VAP	Vapor Pressure		
			VIS	Viscosity		
			VOL	Volume		
			VOV	Volatiles by Volume		
	MEA03	**739**	**Measurement Value** The value of the measurement		**X**	**R 1/20**
	MEA04	**C001**	**Composite Unit of Measure** To identify a composite unit of measure (See Figures Appendix for examples of use)		**X**	
Must Use	**C00101**	**355**	**Unit or Basis for Measurement Code** Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken		**M**	**ID 2/2**
			2Y	Milliroentgen Unit of radiation		
			4C	Centistokes 1 * 10/-6 square meters/second		
			4D	Curie A unit of radioactivity equal to 3.7 * 10/10 disintegrations per second		

59	Parts Per Million
60	Percent Weight
	Use to identify composition as percentage by weight.
89	Poise
90	Saybold Universal Second
C7	Centipoise (CPS)
CE	Centigrade, Celsius
FA	Fahrenheit
GA	Gallon
GJ	Grams per Milliliter
GK	Grams per Kilogram
GL	Grams per Liter
HN	Millimeters of Mercury
KG	Kilogram
LB	Pound
M1	Milligrams per Liter
NA	Milligrams per Kilogram
P1	Percent
UL	Unitless
	Unit of Measure for properties or test results without units of measure
	Use as needed when identifying properties with no unit of measure (e.g., specific gravity or pH).

Not Used	**C00102**	**1018**	**Exponent**	**O**	**R 1/15**
			Power to which a unit is raised		
Not Used	**C00103**	**649**	**Multiplier**	**O**	**R 1/10**
			Value to be used as a multiplier to obtain a new value		
Not Used	**C00104**	**355**	**Unit or Basis for Measurement Code**	**O**	**ID 2/2**
			Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken		
Not Used	**C00105**	**1018**	**Exponent**	**O**	**R 1/15**
			Power to which a unit is raised		
Not Used	**C00106**	**649**	**Multiplier**	**O**	**R 1/10**
			Value to be used as a multiplier to obtain a new value		
Not Used	**C00107**	**355**	**Unit or Basis for Measurement Code**	**O**	**ID 2/2**
			Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken		
Not Used	**C00108**	**1018**	**Exponent**	**O**	**R 1/15**
			Power to which a unit is raised		
Not Used	**C00109**	**649**	**Multiplier**	**O**	**R 1/10**
			Value to be used as a multiplier to obtain a new value		

Not Used	**C00110**	**355**	**Unit or Basis for Measurement Code**	**O**	**ID 2/2**
			Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken		
Not Used	**C00111**	**1018**	**Exponent**	**O**	**R 1/15**
			Power to which a unit is raised		
Not Used	**C00112**	**649**	**Multiplier**	**O**	**R 1/10**
			Value to be used as a multiplier to obtain a new value		
Not Used	**C00113**	**355**	**Unit or Basis for Measurement Code**	**O**	**ID 2/2**
			Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken		
Not Used	**C00114**	**1018**	**Exponent**	**O**	**R 1/15**
			Power to which a unit is raised		
Not Used	**C00115**	**649**	**Multiplier**	**O**	**R 1/10**
			Value to be used as a multiplier to obtain a new value		
	MEA05	**740**	**Range Minimum**	**X**	**R 1/20**
			The value specifying the minimum of the measurement range		
	MEA06	**741**	**Range Maximum**	**X**	**R 1/20**
			The value specifying the maximum of the measurement range		
	MEA07	**935**	**Measurement Significance Code**	**O**	**ID 2/2**
			Code used to benchmark, qualify or further define a measurement value		
			Use as needed to qualify the given measurement value or range. To further define test conditions or provide complex benchmarks, use the 2/TMD/150 segment.		
			01 Where Air = 1		
			02 Where Butyl Acetate = 1		
			03 Approximately		
			04 Equal to		
			05 Greater than or equal to		
			06 Greater than		
			07 Less than		
			08 Less than or equal to		
			09 Where H2O = 1 or Water = 1		
			19 In Water		
			21 Where Ether = 1		
	MEA08	**936**	**Measurement Attribute Code**	**X**	**ID 2/2**
			Code used to express an attribute response when a numeric measurement value cannot be determined		
			Use to identify a qualitative property when a numerical value is not available, applicable, etc. Use precludes the use of MEA03.		
			06 Trace		
			40 Balance		

			44 Not Applicable		
			45 Not Determined		
			46 Negligible		
			50 Not Available		
Not Used	**MEA09**	**752**	**Surface/Layer/Position Code** Code indicating the product surface, layer or position that is being described	**O**	**ID 2/2**
Not Used	**MEA10**	**1373**	**Measurement Method or Device** The method or device used to record the measurement	**O**	**ID 2/4**

Segment: **TMD** **Test Method**
Position: 150
Loop: LX Optional
Level: Detail
Usage: Optional
Max Use: 1
Purpose: To describe the nature of the test performed
Syntax Notes: **1** If either TMD02 or TMD03 is present, then the other is required.
2 If TMD09 is present, then TMD02 is required.
Semantic Notes: **1** TMD07 is the date of the test method as assigned by the issuing organization.
2 TMD08 is the document revision number.
Comments: **1** TMD09 specifies the individual code list of the agency specified in TMD02.
Notes: ***1. Use in section 5 to identify test method used in the determination of flammability limits, flash point, and autoignition temperature.***

2. Use in section 9 to identify test method associated with physical properties. For example, cite qualifiers such as "at 25 degrees C" in TMD06.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes	
Not Used	**TMD01**	**750**	**Product/Process Characteristic Code** Code identifying the general class of a product or process characteristic	**O**	**ID 2/3**
	TMD02	**559**	**Agency Qualifier Code** Code identifying the agency assigning the code values AT American Society for Testing and Materials (ASTM) ***Use to identify the reference source for the flash point method used in TMD03.***	**X**	**ID 2/2**
	TMD03	**751**	**Product Description Code** A code from an industry code list which provides specific data about a product characteristic ***Use to provide the ASTM standard for appropriate flash point test method. Cite the standards as follows:*** ***D1310 (Tag Open-Cup)*** ***D56, (Tag Closed-Cup)*** ***D92, (Cleveland Open-Cup)*** ***D93, (Pensky-Martens Closed-Cup)*** ***D3278, (Setaflash, Closed-Cup)*** ***D4206, (Setaflash, Open-Cup)***	**X**	**AN 1/12**
Not Used	**TMD04**	**937**	**Test Administration Method Code** Code specifying the method of administering the test	**O**	**ID 2/2**
Not Used	**TMD05**	**938**	**Test Medium Code** Code specifying organism on which the test was performed	**O**	**ID 2/2**

	TMD06	**352**	**Description** A free-form description to clarify the related data elements and their content ***Use in section 5, as needed, to further qualify flash point test method.***	**O**	**AN 1/80**
Not Used	**TMD07**	**373**	**Date** Date (YYMMDD)	**O**	**DT 6/6**
Not Used	**TMD08**	**127**	**Reference Number** Reference number or identification number as defined for a particular Transaction Set, or as specified by the Reference Number Qualifier.	**O**	**AN 1/30**
Not Used	**TMD09**	**822**	**Source Subqualifier** A reference that indicates the table or text maintained by the Source Qualifier	**O**	**AN 1/15**

Segment: **MSG** **Message Text**
Position: 160
Loop: LX Optional
Level: Detail
Usage: Optional
Max Use: >1
Purpose: To provide a free form format that would allow the transmission of text information.
Syntax Notes:
Semantic Notes:
Comments: **1** MSG02 is not related to the specific characteristics of a printer, but identifies top of page, advance a line, etc.
Notes: ***1. Use 2/MSG/160 only as needed to provide narrative associated with numerical values and properties identified in the 2/LX/115 loop.***

2. Use multiple repetitions of 2/MSG/160 to carry the necessary text.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	**MSG01**	**933**	**Free-Form Message Text**	**M AN 1/264**
			Free-form message text	
	MSG02	**934**	**Printer Carriage Control Code**	**O ID 2/2**
			A field to be used for the control of the line feed of the receiving printer	
			Use MSG02 codes as needed to accurately portray the text for when the transaction will be used for print-only purposes.	
			AT Advanced Three Lines Before Print	
			DS Advance two lines before print	
			LC Line Continuation	
			NP Advance to next page before print	
			NS No advance before print	
			SS Advance to new line before print	

Segment: **SD1** **Safety Data**
Position: 170
Loop: SD1 Optional
Level: Detail
Usage: Optional
Max Use: 1
Purpose: To provide safety data information to recipients of the transaction, including identification of the hazard that the material being described represents, and the organization or party that declared this material to be a hazard or which established exposure limits or other guidelines for that material

Syntax Notes:
1 At least one of SD105 or SD106 is required.

Semantic Notes:
1 SD106 is a free-form description of a safety characteristic or hazard.
2 SD107 specifies the state or province issuing the regulation that applies to the safety data included in this segment.
3 SD108 specifies the country issuing the regulation that applies to the safety data included in this segment.

Comments:
1 SD101 indicates the format of this safety data information.
2 SD103 identifies the organization responsible for the code used in SD105 or the free-form text in SD106.
3 SD104 is a reference that indicates the table or text maintained by the source qualifier (SD103).
4 SD105 is a code from the organization list which provides specific data about a safety characteristic or hazard.

Notes: ***Use the 2/SD1/170 loop in section 2, Composition/Information on Ingredients, to provide exposure limits for each hazardous component, as a minimum, cited in the 2/LX/115 loop, or, alternately, for all components.***

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	**SD101**	**349**	**Item Description Type** Code indicating the format of a description F Free-form S Structured (From Industry Code List) X Semi-structured (Code and Text)	**M ID 1/1**
Must Use	**SD102**	**821**	**Safety Characteristic/Hazard Code** Code indicating precautionary measures, means of treatment and hazard information and warnings ***Use to identify safety measures associated with any individual ingredient or component.*** EXI Exposure Information ***Use in section 2 to identify exposure limits for each component.***	**M ID 3/3**
	SD103	**559**	**Agency Qualifier Code** Code identifying the agency assigning the code values	**O ID 2/2**

Use as needed in section 2 but only to identify the source for the exposure guideline if not specifically identified by the code value in 2/MEA/180. Cite the specific exposure guideline (e.g., PEL, STEL, Ceiling, etc.) in CID04.

AC	American Conference of Government Industrial Hygienists (ACGIH)
IA	International Agency for Research on Cancer (IARC)
MC	Manufacturing Company
MP	Material Safety Data Sheet (MSDS) Provider
NI	National Institute of Occupational Safety and Health (NIOSH)
NT	National Toxicology Program (NTP)
OS	United States Occupational Safety and Health Administration (OSHA)

	SD104	**822**	**Source Subqualifier**	**O**	**AN 1/15**

A reference that indicates the table or text maintained by the Source Qualifier

Use to identify the specific exposure guideline when citing a source agency or organization in CID03.

Not Used	**SD105**	**751**	**Product Description Code**	**X**	**AN 1/12**

A code from an industry code list which provides specific data about a product characteristic

Must Use	**SD106**	**352**	**Description**	**X**	**AN 1/80**

A free-form description to clarify the related data elements and their content

Must use in section 2 to identify each hazardous component's general hazard classification (e.g., "eye irritant" or "none").

Not Used	**SD107**	**156**	**State or Province Code**	**O**	**ID 2/2**

Code (Standard State/Province) as defined by appropriate government agency

Not Used	**SD108**	**26**	**Country Code**	**O**	**ID 2/3**

Code identifying the country

Segment: **MEA** **Measurements**
Position: 180
Loop: SD1 Optional
Level: Detail
Usage: Optional
Max Use: >1
Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances, and weights (See Figures Appendix for example of use of C001)
Syntax Notes:
1 At least one of MEA03 MEA05 MEA06 or MEA08 is required.
2 If MEA05 is present, then MEA04 is required.
3 If MEA06 is present, then MEA04 is required.
4 If MEA07 is present, then at least one of MEA03 MEA05 or MEA06 is required.
5 Only one of MEA08 or MEA03 may be present.
Semantic Notes:
1 MEA04 defines the unit of measure for MEA03, MEA05, and MEA06.
Comments:
1 When citing dimensional tolerances, any measurement requiring a sign (+ or -), or any measurement where a positive (+) value cannot be assumed, use MEA05 as the negative (-) value and MEA06 as the positive (+) value.
Notes: ***Use the 2/MEA/180 segment in section 2, Composition or Information on Ingredients, to identify the exposure guidelines and threshold limit values for each hazardous component by appropriate agency measurement.***

Data Element Summary

Ref. Des.	Data Element	Name	Attributes
MEA01	**737**	**Measurement Reference ID Code** Code identifying the broad category to which a measurement applies TR Test Results Indicates that the data to follow are the results test measurements ***Use in section 2 when identifying exposure limits.***	**O ID 2/2**
MEA02	**738**	**Measurement Qualifier** Code identifying a specific product or process characteristic to which a measurement applies ***Use to identify specific exposure guideline.*** ELO Occupational Safety and Health Administration (OSHA) Permissable Exposure Limit ***Use to identify the OSHA PEL Time Weighted Average (TWA).*** ELP Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit Ceiling ***Use to identify the OSHA PEL Ceiling.*** ELS American Conference of Government Industrial Hygienists (ACGIH) Threshold Limit Value: Short -Term Exposure ***Use to identify the ACGIH TLV short-term (15***	**O ID 1/3**

			minutes or less) limit.			
			ELT American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value: Time Weighted Average			
			Use to identify the ACGIH TLV Time Weighted Average (TWA).			
			STL Short Term Exposure Limit			
			Use to identify a short-term (15 minutes or less) exposure limit.			
	MEA03	**739**	**Measurement Value** The value of the measurement ***Use to identify the exposure limit value.***	**X**	**R**	**1/20**
	MEA04	**C001**	**Composite Unit of Measure** To identify a composite unit of measure (See Figures Appendix for examples of use)	**X**		
Must Use	**C00101**	**355**	**Unit or Basis for Measurement Code** Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken 59 Parts Per Million GP Milligrams per Cubic Meter	**M**	**ID**	**2/2**
Not Used	**C00102**	**1018**	**Exponent** Power to which a unit is raised	**O**	**R**	**1/15**
Not Used	**C00103**	**649**	**Multiplier** Value to be used as a multiplier to obtain a new value	**O**	**R**	**1/10**
Not Used	**C00104**	**355**	**Unit or Basis for Measurement Code** Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken	**O**	**ID**	**2/2**
Not Used	**C00105**	**1018**	**Exponent** Power to which a unit is raised	**O**	**R**	**1/15**
Not Used	**C00106**	**649**	**Multiplier** Value to be used as a multiplier to obtain a new value	**O**	**R**	**1/10**
Not Used	**C00107**	**355**	**Unit or Basis for Measurement Code** Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken	**O**	**ID**	**2/2**
Not Used	**C00108**	**1018**	**Exponent** Power to which a unit is raised	**O**	**R**	**1/15**
Not Used	**C00109**	**649**	**Multiplier** Value to be used as a multiplier to obtain a new value	**O**	**R**	**1/10**
Not Used	**C00110**	**355**	**Unit or Basis for Measurement Code** Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken	**O**	**ID**	**2/2**
Not Used	**C00111**	**1018**	**Exponent**	**O**	**R**	**1/15**

			Power to which a unit is raised		
Not Used	**C00112**	**649**	**Multiplier**	**O**	**R 1/10**
			Value to be used as a multiplier to obtain a new value		
Not Used	**C00113**	**355**	**Unit or Basis for Measurement Code**	**O**	**ID 2/2**
			Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken		
Not Used	**C00114**	**1018**	**Exponent**	**O**	**R 1/15**
			Power to which a unit is raised		
Not Used	**C00115**	**649**	**Multiplier**	**O**	**R 1/10**
			Value to be used as a multiplier to obtain a new value		
Not Used	**MEA05**	**740**	**Range Minimum**	**X**	**R 1/20**
			The value specifying the minimum of the measurement range		
Not Used	**MEA06**	**741**	**Range Maximum**	**X**	**R 1/20**
			The value specifying the maximum of the measurement range		
Not Used	**MEA07**	**935**	**Measurement Significance Code**	**O**	**ID 2/2**
			Code used to benchmark, qualify or further define a measurement value		
	MEA08	**936**	**Measurement Attribute Code**	**X**	**ID 2/2**
			Code used to express an attribute response when a numeric measurement value cannot be determined		
			Use only when a numerical exposure limit value is not available. Use precludes use of MEA03.		
			44 Not Applicable		
			45 Not Determined		
			50 Not Available		
Not Used	**MEA09**	**752**	**Surface/Layer/Position Code**	**O**	**ID 2/2**
			Code indicating the product surface, layer or position that is being described		
Not Used	**MEA10**	**1373**	**Measurement Method or Device**	**O**	**ID 2/4**
			The method or device used to record the measurement		

Segment: **MSG** **Message Text**
Position: 190
Loop: SD1 Optional
Level: Detail
Usage: Optional
Max Use: >1
Purpose: To provide a free form format that would allow the transmission of text information.
Syntax Notes:
Semantic Notes:
Comments: **1** MSG02 is not related to the specific characteristics of a printer, but identifies top of page, advance a line, etc.
Notes: ***1. Use 2/MSG/190 only when needed to provide narrative associated with exposure information in the 2/SD1/170 loop.***

2. Use multiple repetitions of 2/MSG/190 to convey the necessary text.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	**MSG01**	**933**	**Free-Form Message Text**	**M AN 1/264**
			Free-form message text	
	MSG02	**934**	**Printer Carriage Control Code**	**O ID 2/2**
			A field to be used for the control of the line feed of the receiving printer	
			Use MSG02 codes as needed to accurately portray the text for when the transaction will be used for print-only purposes.	
			AT Advanced Three Lines Before Print	
			DS Advance two lines before print	
			LC Line Continuation	
			NP Advance to next page before print	
			NS No advance before print	
			SS Advance to new line before print	

Segment: **SE** **Transaction Set Trailer**
Position: 020
Loop:
Level: Summary
Usage: Mandatory
Max Use: 1
Purpose: To indicate the end of the transaction set and provide the count of the transmitted segments (including the beginning (ST) and ending (SE) segments).
Syntax Notes:
Semantic Notes:
Comments: **1** SE is the last segment of each transaction set.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes	
Must Use	**SE01**	**96**	**Number of Included Segments** Total number of segments included in a transaction set including ST and SE segments	**M**	**N0 1/10**
Must Use	**SE02**	**329**	**Transaction Set Control Number** Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set ***Cite the same number as the one cited in ST02.***	**M**	**AN 4/9**